

PHOSPHOROUS-DOPED SILICON DIOXIDE PROCESS TO CUSTOMIZE CONTACT  
ETCH PROFILES

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**ABSTRACT OF THE DISCLOSURE**

A method for depositing a doped silicon dioxide layer is provided that allows the dopant concentration in the silicon dioxide layer to be controlled throughout the layer. By controlling the dopant concentration throughout the layer the etch profile of contact holes etched into the layer can be controlled and footing can be prevented or eliminated. During the deposition of the silicon dioxide, the amount of dopant is increased as the temperature of the wafer is increased and held constant while the temperature of the wafer is constant.